# (19) World Intellectual Property Organization International Bureau



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(54) Title: METHOD FOR THE SELECTIVE PROTECTION OF PROLIFERATING NORMAL CELLS AND THE SELECTIVE ERADICATION OF TUMOR CELLS HAVING AN INACTIVE p53 PATHWAY

(57) Abstract: Object of the present invention is a method for obtaining the selective protection of normal cells and, at the same time, the selective eradication of tumor cells having an inactive p53 pathway. Further objects of the present invention are the uses of the compounds of the method, pharmaceutical compositions and kits, comprising such compounds as active principles, and use of the C3H10T1/2 cells for implementing methods for the eradication of tumor cells having an inactive p53 pathway.

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A. CLASSIFICATION OF SUBJECT MAT IPC 7 C12N5/06 AC A61K31/40

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According to International Patent Classification (IPC) or to both national classification and IPC

#### **B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, EPO-Internal, PAJ, WPI Data, MEDLINE

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
Х	RICHMAN C M ET AL: "INTERFERON PROTECTS NORMAL HUMAN GRANULOCYTE-MACROPHAGE COLONY-FORMING CELLS FROM ARA-C CYTOTOXICITY" JOURNAL OF BIOLOGICAL RESPONSE MODIFIERS, vol. 9, no. 6, 1990, pages 570-575, XP002165025 ISSN: 0732-6580 abstract page 570, column 2, last paragraph -page 571, column 1, paragraph 1 page 572, column 1 -column 2, paragraph 1 page 573, paragraph 3	1-3, 10-12, 17,18, 24-27,30	
X A	EP 0 297 946 A (UNIV SYRACUSE) 4 January 1989 (1989-01-04) abstract page 4, line 25 - line 42	17-23	

χ Further documents are listed in the continuation of box C.	Patent family members are listed in annex.		
Special categories of cited documents:  A* document defining the general state of the art which is not considered to be of particular relevance  E* earlier document but published on or after the international filing date  L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  O* document referring to an oral disclosure, use, exhibition or other means  P* document published prior to the international filing date but later than the priority date claimed	<ul> <li>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</li> <li>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</li> <li>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</li> <li>"&amp;" document member of the same patent family</li> </ul>		
Date of the actual completion of the international search	Date of mailing of the international search report		
11 April 2001	04/05/2001		
Name and mailing address of the ISA	Authorized officer		
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Noë, V		

Interna .I Application No
IT 00/00373

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SASSE FLORENZ ET AL: "The chondramides: Cytostatic agents from myxobacteria acting on the actin cytoskeleton."  JOURNAL OF THE NATIONAL CANCER INSTITUTE (BETHESDA), vol. 90, no. 20, 21 October 1998 (1998-10-21), pages 1559-1563, XP000990945 ISSN: 0027-8874	17-23
Α	the whole document	
X A	WO 97 10242 A (PHARMA MAR SA ;RUFFLES GRAHAM KEITH (GB); HIGA TATSUO (JP); TANAKA) 20 March 1997 (1997-03-20) abstract	17-23
^	page 1, paragraph 2 - last line page 2, last paragraph -page 3, paragraph l page 3, last paragraph -page 4, paragraph l	
Α	BOKEMEYER C ET AL: "SILIBININ PROTECTS AGAINST CISPLATIN-INDUCED NEPHROTOXICITY WITHOUT COMPROMISING CISPLATIN OR IFOSFAMIDE ANTI-TUMOUR ACTIVITY" BRITISH JOURNAL OF CANCER, GB, LONDON, vol. 74, 1996, pages 2036-2041, XP000874389 ISSN: 0007-0920 the whole document	
Α	OTSUKA H ET AL: "VARIANT LINES OF MOUSE KIDNEY CELLS TRANSFORMED BY AN SV-40-TSA MUTANT WITH GROWTH PROPERTIES OF WILD TYPE TRANSFORMED CELLS AT NONPERMISSIVE TEMPERATURE" JOURNAL OF GENERAL VIROLOGY, vol. 42, no. 2, 1979, pages 373-386, XP000990951 EN ISSN: 0022-1317 abstract page 377, last paragraph -page 378, paragraph 1; figure 4	
Α	RUBTSOVA S N ET AL: "Disruption of actin microfilaments by cytochalasin D leads to activation of p53." FEBS LETTERS, vol. 430, no. 3, 3 July 1998 (1998-07-03), pages 353-357, XP002164902 ISSN: 0014-5793 the whole document	

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/IT 00/00373 TO BE RELEVANT C.(Continuation) DOCUMENTS CONSID Citation of document, with indication, where appropriate, of the relevant passages Category ° Relevant to claim No. Α WANG E A ET AL: "BONE MORPHOGENETIC 31-33 PROTEIN-2 CAUSES COMMITMENT AND DIFFERENTIATION IN C3H10T1/2 AND 3T3 CELLS" GROWTH FACTORS, HARWOOD ACADEMIC PUBLISHERS GMBH,XX, vol. 9, no. 1, 1993, pages 57-71, XP002920878 ISSN: 0897-7194 abstract

### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 1-7.12-21.24.27-30 relate to a compositions, kits and methods having or using compounds defined by reference to a desirable characteristic or property, namely (a) chemotherapeutic compounds (in claim 3 also called class B compounds) said compounds exerting cytotoxic action toward actively proliferation cells and not affecting survival and proliferative potential of interphase cells and (b) protective compounds (in claim 3 also called A compounds) said compounds having the capability of reversibly inhibiting cytodieresis of normal cells and non-inhibiting the biological action of a chemotherapeutic compound. The claims cover all compositions, kits and methods having or using these compounds having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such compounds and methods. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the compound and their methods of use by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to compositons, kits and methods having or using the compounds described in claims 8-11, 22-23 and 25-26 and the general concept of the application, concering the compositions, kits and methods in so far the compounds are defined as above in (a) and (b).

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

Imormation on patent family members

Interna: I Application No
IT 00/00373

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 0297946	A	04-01-1989	AU JP WO	1969388 A 3500166 T 8810259 A	19-01-1989 17-01-1991 29-12-1988
WO 9710242	Α	20-03-1997	AU	6936596 A	01-04-1997